CLAIMS

WHAT IS CLAIMED IS:

1. A method for preserving copy protection in an input video signal comprising:

receiving the input video signal;

determining if the input video signal includes copy protection;

converting the input video signal to component video data, wherein conversion to component video data removes the copy protection;

generating an output video signal from the component video data; and

when the input video signal includes copy protection, recreating the copy protection in the output video signal.

2. The method of claim 1, wherein determining if the input video signal includes copy protection further comprises determining if pulses are included in the input video signal that exceed a first threshold.

3. The method of claim 2, wherein determining if pulses are included further comprises determining if automatic gain control pulses exceeding vertical blanking interval peak white threshold are included in the input video signal.

4. The method of claim 2, wherein determining if pulses are included further

comprises:

quantising the input video signal to produce a digital input signal, wherein the digital input signal includes a stream of values;

comparing amplitude of each value of the stream of values with the first threshold;

when the amplitude of a value exceeds the first threshold incrementing an accumulator value;

at a point during each frame, comparing the accumulator value with a second threshold;

after comparing the accumulator value with the second threshold, clearing the accumulator value;

when comparing determines the accumulator value exceeds the second threshold, incrementing a count value;

when comparing determines the accumulator value does not exceed the second threshold, decrementing the count value;

when the count value reaches a high count value, indicating that pulse-type copy protection is included in the input video stream; and

when the count value reaches a low count value, indicating that pulse-type copy protection is not included in the input video stream.

5. The method of claim 1, wherein determining if the input video signal includes copy protection further comprises determining if there are phase flips within colorburst portions of lines of video data included in the input video stream.

6. The method of claim 5, wherein determining if there are phase flips further comprises determining if there are systematic phase flips occurring in regularly spaced line intervals.

7. The method of claim 6, wherein determining if there are systematic phase flips further comprises:

determining a total number of phase flips per display field; and

determining an interval number of phase flips, wherein each occurrence of phase flipping occurs in groups of sequential lines, wherein the interval number indicates a number of lines per group.

8. The method of claim 7, wherein determining if there are systematic phase flips further comprises:

demodulating the input video signal to produce demodulated chroma that includes a colorburst signal for each line of the input video signal;

performing an absolute value function on the demodulated chroma to produce absolute value chroma that includes an absolute value colorburst signal; and

comparing phase of the colorburst signal with phase of the absolute value colorburst signal to determine if a phase flip has occurred for each line in the input video signal.

9. The method of claim 1, wherein recreating the copy protection information in the output video signal further comprises recreating the copy protection information when the output video signal is provided one of a selected set of outputs, wherein outputs of the selected set of outputs are capable of coupling to recording devices.

10. The method of claim 1 further comprises when the input video signal includes copy protection, disabling image capturing functionality within a video graphics controller that processes the input video signal.

11. A copy protection pulse detection circuit, comprising:

a pulse detector, wherein the pulse detector receives an input video signal and sets a pulse detect indication each time a pulse that exceeds a first threshold is detected in the input video signal;

an accumulator operably coupled to the pulse detector, wherein the accumulator counts a number of pulses received in each frame of the input video signal to produce an accumulated count;

a field pulse comparator operably coupled to the accumulator, wherein the field pulse comparator compares the accumulated count for each field with a second threshold, wherein when the accumulated count exceeds the second threshold for a field, the field pulse comparator asserts a positive count indication for the field;

a decision counter operably coupled to the field pulse comparator, wherein the decision counter increments a decision count when the positive count indication is asserted for a field and decrements the decision count when the positive count indication is not asserted for a field; and

a decision comparator operably coupled to the decision counter, wherein when the decision count reaches a high threshold, the decision comparator sets a pulses detected indication, wherein when the decision count reaches a low threshold, the decision comparator clears the pulses detected indication.

12. The copy protection pulse detection circuit of claim 11, wherein the pulse detector further comprises:

an analog to digital converter that converts the input video signal to a digital input

signal;

a low pass filter operably coupled to the analog to digital converter, wherein the low pass filter filters the digital input signal to produce a filtered input signal; and

a pulse detection comparator operably coupled to the low pass filter, wherein the pulse detection comparator compares digital values in the filtered input signal with the first threshold, wherein the pulse detection comparator sets the pulse detect indication each time a digital value exceeds the first threshold.

13. The copy protection pulse detection circuit of claim 12, wherein the pulse detector further comprises a blanking interval gate, operably coupled to the pulse detection comparator, wherein the blanking interval gate selectively passes the pulse detect indication based on a received signal indicating that the input video signal is in the vertical blanking interval.

14. The copy protection pulse detection circuit of claim 13, wherein the detection circuit is included on a video graphics integrated circuit.

15. A colorburst phase flip detection circuit, comprising:

a phase flip detection block that receives a demodulated chroma signal, wherein the phase flip detection block detects when a phase flip is included in a colorburst portion of the chroma signal, wherein the phase flip detection block checks each line of each frame of the demodulated chroma signal for phase flips, wherein the phase flip detection block sets a flip detected indication each time a line is found to include a phase flip, wherein the flip detected indication is cleared based on a line boundary indication;

a field counting block operably coupled to the phase flip detection block, wherein the field counting block determines a field count equal to a number of phase flips per field based on the flip detected indication and a field boundary indication; and

an interval counting block operably coupled to the phase flip detection block, wherein the interval counting block determines an interval count equal to a number of consecutive lines having phase flips based on the flip detected indication.

16. The colorburst phase flip detection circuit of claim 15, wherein the phase flip detection block detects when a phase flip is included by comparing an integrated absolute value of the demodulated chroma signal with the demodulated chroma signal.

17. A method for detecting copy protection pulses in an input video signal, comprising:

quantising the input video signal to produce a digital input signal, wherein the digital input signal includes a stream of values;

comparing amplitude of each value of the stream of values with a first threshold;

when the amplitude of a value exceeds the first threshold, incrementing an accumulator value;

at a point during each frame, comparing the accumulator value with a second threshold;

after comparing the accumulator value with the second threshold, clearing the accumulator value;

when comparing determines the accumulator value exceeds the second threshold, incrementing a count value;

when comparing determines the accumulator value does not exceed the second threshold, decrementing the count value;

when the count value reaches a high count value, indicating that pulse-type copy protection is included in the input video stream; and

when the count value reaches a low count value, indicating that pulse-type copy protection is not included in the input video stream.

18. The method of claim 17, wherein comparing amplitude of each value of the stream of values with a first threshold further comprises determining if automatic gain control pulses that exceed a vertical blanking interval peak white threshold are included in the input video signal.

19. A method for detecting phase flip copy protection in an input video signal, comprising:

demodulating the input video signal to produce demodulated chroma signal that includes a colorburst signal for each line of the input video signal;

performing an absolute value function on the demodulated chroma signal to produce an absolute value chroma signal that includes an absolute value colorburst signal;

comparing phase of the colorburst signal with phase of the absolute value colorburst signal to determine if a phase flip has occurred for each line in the input video signal;

determining a total number of phase flips per display field; and

determining an interval number of phase flips, wherein each occurrence of phase flipping occurs in groups of sequential lines, wherein the interval number indicates a number of lines per group.

20. The method of claim 19, wherein comparing phase of the colorburst signal with phase of the absolute value colorburst signal further comprises:

integrating the absolute value colorburst signal to produce an integrated colorburst value; and

comparing the integrated colorburst value with values in the colorburst signal.